

Miscellaneous, Including Horseradish and Wheat

Southern Illinois University

Bicyclopyrone: Tolerance and Efficacy in Horseradish - Site 1 - High Weed Pressure.

Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Status: F one-year/final Initiation Date: 4-26-16 Completion Date: 7-10-16	Trial Location
City: Collinsville Country: USA State/Prov.: Illinois IL Postal Code: 62234	
Latitude of LL Corner °: 38.68859 N Longitude of LL Corner °: 90.01728 W Altitude of LL Corner, Unit: 429.00 FT Angle y-axis to North °: 4.00	

Objectives:
Determine if bicyclopyrone has better weed control while providing acceptable tolerance in horseradish compared to competitive products when applied either preemergence or post-directed.

Study Director: Karla Gage, Ph.D. Title: Assistant Professor of Weed Science Organization: Southern Illinois University Carbondale Address: 1205 Lincoln Drive MC 4415 Phone No.: 618-453-7679 City+State/Prov: Carbondale, IL Postal Code: 62901 E-mail: kgage@siu.edu Country: USA	Contacts
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Crop 1: ARWLA <i>Armoracia rusticana</i> Horseradish Variety: 22C BBCH Scale: BVRT Planting Rate, Unit: 7260 sets/A Planting Method: TRANSP Row Spacing, Unit: 36 IN	Crop Description
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Pest 1 Type: W Code: SETVP <i>Setaria viridis robusta-purpur</i> Common Name: Robust purple foxtail	Pest Description
Pest 2 Type: W Code: AMAPA <i>Amaranthus palmeri</i> S.Wats. Common Name: amaranth, Palmer Description: glyphosate-resistant Palmer amaranth	

Treated Plot Width: 6.67 FT Total Plot Width: 12 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT	Site and Design						
Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block	Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)						
<table border="1"><thead><tr><th>No.</th><th>Previous Crop</th><th>Year</th></tr></thead><tbody><tr><td>1.</td><td>ARWLA</td><td>2015</td></tr></tbody></table>	No.	Previous Crop	Year	1.	ARWLA	2015	
No.	Previous Crop	Year					
1.	ARWLA	2015					

Maintenance				
<table border="1"><thead><tr><th>No.</th><th>Maintenance Product Name</th></tr></thead><tbody><tr><td>1.</td><td>N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A</td></tr></tbody></table>	No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A
No.	Maintenance Product Name			
1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A			

Description Name: Collinsville IL 2015 % Sand: 63.54 % OM: 2.17 Texture: SIL silt loam % Silt: 28.4 pH: 7.7 Soil Name: Littleton/Haymond/Orion % Clay: 8.06 CEC: 11.6	Soil Description									
<table border="1"><thead><tr><th>Element</th><th>Quantity</th><th>Unit</th></tr></thead><tbody><tr><td>P1</td><td>204</td><td>lb/A</td></tr><tr><td>K</td><td>476</td><td>lb/A</td></tr></tbody></table>	Element	Quantity	Unit	P1	204	lb/A	K	476	lb/A	Additional Measured Elements
Element	Quantity	Unit								
P1	204	lb/A								
K	476	lb/A								

Overall Moisture Conditions: NORMAL Closest Weather Station: CLIMATE CORP	Moisture and Weather Conditions	Distance, Unit: 1 MI
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Bicyclopyrone: Tolerance and Efficacy in Horseradish - Site 1 - High Weed Pressure.

Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-1-16					7	DAY	32	75	F
2.	4-6-16	0.35	IN	RAIN	rain	1	DAY			
3.	4-8-16					7	DAY	28	71	F
4.	4-10-16	1.45	IN	RAIN	rain	2	DAY			
5.	4-15-16					7	DAY	48	81	F
6.	4-19-16	0.88	IN	RAIN	rain	3	DAY			
7.	4-22-16					7	DAY	47	85	F
8.	4-26-16	0.93	IN	RAIN	rain	2	DAY			
9.	4-29-16					7	DAY	46	75	F
10.	4-29-16	1.17	IN	RAIN	rain	2	DAY			
11.	5-3-16	0.04	IN	RAIN	rain	1	DAY			
12.	5-6-16					7	DAY	44	87	F
13.	5-7-16	0.43	IN	RAIN	rain	1	DAY			
14.	5-9-16	2.21	IN	RAIN	rain	5	DAY			
15.	5-13-16					7	DAY	41	76	F
16.	5-16-16	0.74	IN	RAIN	rain	2	DAY			
17.	5-20-16					7	DAY	51	83	F
18.	5-26-16	0.8	IN	RAIN	rain	2	DAY			
19.	5-27-16					7	DAY	62	88	F
20.	5-31-16	0.18	IN	RAIN	rain	1	DAY			
21.	6-3-16					7	DAY	55	89	F
22.	6-3-16	0.28	IN	RAIN	rain	1	DAY			
23.	6-4-16	0.27	IN	RAIN	rain	1	DAY			
24.	6-10-16					7	DAY	65	96	F
25.	6-13-16	1	IN	RAIN	rain	1	DAY			
26.	6-17-16					7	DAY	67	97	F
27.	6-24-16					7	DAY	57	95	F
28.	6-25-16	1.42	IN	RAIN	rain	2	DAY			
29.	6-30-16	0.66	IN	RAIN	rain	1	DAY			
30.	7-1-16					7	DAY	60	91	F
31.	7-1-16	1.31	IN	RAIN	rain	4	DAY			
32.	7-6-16	0.85	IN	RAIN	rain	2	DAY			
33.	7-8-16					7	DAY	67	93	F
34.	7-12-16	1.07	IN	RAIN	rain	3	DAY			
35.	7-15-16					7	DAY	68	93	F
36.	7-19-16	2.11	IN	RAIN	rain	2	DAY			
37.	7-22-16	0.06	IN	RAIN	rain	1	DAY			
38.	7-24-16	0.69	IN	RAIN	rain	1	DAY			
39.	7-25-16	0.17	IN	RAIN	rain	2	DAY			
40.	7-27-16	1.21	IN	RAIN	rain	1	DAY			

Comment:

The Climate Corporation provided estimates of rainfall at this Collinsville location. Air temperature was recorded at Scott Air Force Base 15 miles SE and provided by NOAA's National Centers for Environmental Information. Air temperatures given are summarized as weekly high and low, detailed weather data is available on request.

Bicyclopyrone: Tolerance and Efficacy in Horseradish - Site 1 - High Weed Pressure.

Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Application Description

	A	B	C
Application Date:	4-29-16	5-10-16	5-29-16
Appl. Start Time:	15:00	12:00	10:00
Appl. Stop Time:	15:30	12:30	10:20
Application Method:	Spray	Spray	Spray
Application Timing:	7DAP	0DAE_1-2	14-21DAE
Application Placement:	BROFOL	BROFOL	BROFOL
Applied By:	RFK	RFK	KNW
Air Temperature, Unit:	64 F	71 F	83 F
% Relative Humidity:	73	87	49
Wind Velocity, Unit:	2 MPH	2 MPH	2 MPH
Wind Direction:	ENE	S	W
Dew Presence (Y/N):	N	N	N
Soil Temperature, Unit:	63 F	66 F	72 F
Soil Moisture:	NORMAL	ABONOR	NORMAL
% Cloud Cover:	50	75	0
Next Moisture Occurred On:	4-30-16	5-11-16	5-31-16
Time to Next Moisture, Unit:	13 HR	28 HR	50 HR

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale:	ARWLA	ARWLA	ARWLA
Stage Scale Used:	DESC	DESC	DESC
Stage Majority, Percent:	NA	1	10
Stage Minimum, Percent:		0	5
Stage Maximum, Percent:		2	10
Height, Unit:		1 IN	12 IN
Height Minimum, Maximum:		0 1	8 12

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale:	SETVP W	SETVP W	SETVP W
Stage Majority, Percent:	NA	3	4
Stage Minimum, Percent:		1	2
Stage Maximum, Percent:		3	4
Height, Unit:		0.5 IN	5 IN
Height Minimum, Maximum:		0 0.5	3 8
Density, Unit:		3 FT2	3 FT2
Pest 2 Code, Type, Scale:	AMAPA W	AMAPA W	AMAPA W
Stage Majority, Percent:	NA	3	6
Stage Minimum, Percent:		2	4
Stage Maximum, Percent:		3	8
Height, Unit:		0.5 IN	2 IN
Height Minimum, Maximum:		0 0.5	1 4
Density, Unit:		1 FT2	20 FT2

Application Equipment

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI	30 PSI
Nozzle Type:	XR	XR	XR
Nozzle Size:	8002	8002	8002E
Boom Length, Unit:	6.67 FT	6.67 FT	3 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA

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Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
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Pest Code								ARWLA 5-19-16 Emergence DAP
Crop Code								
Rating Date								
Rating Type								
Rating Unit								
Rating Timing								
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Stage	Appl Code
1	NONTREATED							23 a
2	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		7DAP	A 23 a
3	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		7DAP	A 23 a
4	AUTHORITY ELITE SPARTAN 4F	7	SC	1.37 lb ai/a	25 fl oz/a		7DAP	A 23 a
		4	SC	0.11 lb ai/a	3.52 fl oz/a		7DAP	A
5	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		0DAE_1-2	B 23 a
6	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		0DAE_1-2	B 23 a
7	AUTHORITY ELITE SPARTAN 4F	7	SC	1.37 lb ai/a	25 fl oz/a		0DAE_1-2	B 23 a
		4	SC	0.11 lb ai/a	3.52 fl oz/a		0DAE_1-2	B
8	A16003 INDUCE	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		14-21DAE	C 23 a
		100	SL	0.25 % v/v	0.25 % v/v		14-21DAE	C
9	A16003 INDUCE	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		14-21DAE	C 23 a
		100	SL	0.25 % v/v	0.25 % v/v		14-21DAE	C
10	AUTHORITY ELITE SPARTAN 4F	7	SC	1.37 lb ai/a	25 fl oz/a		14-21DAE	C 23 a
		4	SC	0.11 lb ai/a	3.52 fl oz/a		14-21DAE	C
LSD P=.05								.
Standard Deviation								0.0
CV								0.0
Replicate F								0.000
Replicate Prob(F)								1.0000
Treatment F								0.000
Treatment Prob(F)								1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Could not calculate LSD (% mean diff) for columns 5,21,25,26 because error mean square = 0.

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								ARWLA 5-26-16 Injury Percent 7 DAE	ARWLA 6-2-16 Injury Percent 14 DAE	ARWLA 6-5-16 Injury Percent 7 DA-C	ARWLA 6-12-16 Injury Percent 14 DA-C	ARWLA 6-16-16 Injury Percent 28 DAE	ARWLA 6-26-16 Injury Percent 28 DA-C	ARWLA 7-10-16 Injury Percent 42 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Stage	Appl Code							
1	NONTREATED								0	0	0	0	0	0	
2	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		7DAP	A	5 c	5 c	0 d	3 c	3 c	0 a	0 a
3	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		7DAP	A	25 b	28 b	33 ab	30 ab	30 ab	0 a	0 a
4	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		7DAP 7DAP	A A	0 c	0 c	0 d	0 c	0 c	0 a	0 a
5	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		0DAE_1-2	B	20 b	20 b	12 cd	12 bc	12 bc	0 a	0 a
6	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		0DAE_1-2	B	58 a	60 a	30 abc	37 ab	37 ab	0 a	0 a
7	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		0DAE_1-2 0DAE_1-2	B B	0 c	0 c	0 d	2 c	2 c	0 a	0 a
8	A16003 INDUCE	1.67 SL 100 SL		0.0446 lb ai/a 0.25 % v/v	3.42 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			22 abc	22 abc	22 abc	0 a	0 a
9	A16003 INDUCE	1.67 SL 100 SL		0.089 lb ai/a 0.25 % v/v	6.84 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			37 a	47 a	47 a	0 a	0 a
10	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		14-21DAE 14-21DAE	C C			17 bcd	18 bc	18 bc	0 a	0 a
LSD P=.05								7.4	9.0	19.2	26.4	26.4	.	.	
Standard Deviation								4.0	5.0	11.1	15.3	15.3	0.0	0.0	
CV								22.42	26.32	66.71	80.81	80.81	0.0	0.0	
Replicate F								0.085	0.393	0.629	0.727	0.727	0.000	0.000	
Replicate Prob(F)								0.9194	0.6848	0.5457	0.4985	0.4985	1.0000	1.0000	
Treatment F								91.407	65.213	5.275	3.487	3.487	0.000	0.000	
Treatment Prob(F)								0.0001	0.0001	0.0023	0.0160	0.0160	1.0000	1.0000	

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Pest Code								ARWLA	ARWLA
Crop Code								6-26-16	7-10-16
Rating Date								Stunt	Stunt
Rating Type								Percent	Percent
Rating Unit									
Rating Timing									
Trt-Eval Interval								28 DA-C	42 DA-C
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code	
1	NONTREATED								0
2	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		7DAP	A	0 b
3	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		7DAP	A	0 b
4	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		7DAP 7DAP	A A	0 b
5	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		0DAE_1-2	B	0 b
6	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		0DAE_1-2	B	7 b
7	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		0DAE_1-2 0DAE_1-2	B B	0 b
8	A16003 INDUCE	1.67 SL 100 SL		0.0446 lb ai/a 0.25 % v/v	3.42 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C	0 b
9	A16003 INDUCE	1.67 SL 100 SL		0.089 lb ai/a 0.25 % v/v	6.84 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C	17 a
10	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		14-21DAE 14-21DAE	C C	0 b
LSD P=.05								7.8	.
Standard Deviation								4.5	0.0
CV								174.09	0.0
Replicate F								0.182	0.000
Replicate Prob(F)								0.8355	1.0000
Treatment F								4.818	0.000
Treatment Prob(F)								0.0037	1.0000

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								SETVP	SETVP	SETVP	SETVP	SETVP	SETVP	SETVP	
								5-26-16 Control Percent 7 DAE	6-2-16 Control Percent 14 DAE	6-5-16 Control Percent 7 DA-C	6-12-16 Control Percent 14 DA-C	6-16-16 Control Percent 28 DAE	6-26-16 Control Percent 28 DA-C	7-10-16 Control Percent 42 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Stage	Appl Code							
1	NONTREATED								0	0	0	0	0	0	
2	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		7DAP	A	94 a	87 a	80 ab	72 ab	72 ab	72 abc	72 ab
3	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		7DAP	A	99 a	98 a	93 a	93 a	93 a	93 a	93 a
4	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		7DAP 7DAP	A A	99 a	99 a	92 a	88 a	88 a	88 a	90 a
5	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		0DAE_1-2	B	93 a	90 a	48 c	37 c	37 c	42 c	38 b
6	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		0DAE_1-2	B	99 a	97 a	83 ab	85 a	85 a	78 ab	63 ab
7	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		0DAE_1-2 0DAE_1-2	B B	99 a	99 a	95 a	93 a	93 a	93 a	93 a
8	A16003 INDUCE	1.67 SL 100 SL		0.0446 lb ai/a 0.25 % v/v	3.42 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			63 bc	57 bc	57 bc	50 bc	40 b
9	A16003 INDUCE	1.67 SL 100 SL		0.089 lb ai/a 0.25 % v/v	6.84 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			90 ab	90 a	90 a	90 a	90 a
10	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		14-21DAE 14-21DAE	C C			80 ab	87 a	87 a	80 ab	80 a
LSD P=.05								6.8	10.9	26.9	27.2	27.2	31.3	39.9	
Standard Deviation								3.7	6.0	15.6	15.7	15.7	18.1	23.0	
CV								3.85	6.32	19.33	20.12	20.12	23.67	31.4	
Replicate F								1.600	0.799	0.103	1.584	1.584	0.735	0.566	
Replicate Prob(F)								0.2494	0.4764	0.9024	0.2357	0.2357	0.4950	0.5789	
Treatment F								1.665	2.356	2.971	4.646	4.646	3.268	2.715	
Treatment Prob(F)								0.2303	0.1166	0.0304	0.0044	0.0044	0.0209	0.0424	

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Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
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Pest Code								AMAPA-HR	AMAPA-HR	AMAPA-HR	AMAPA-HR	AMAPA-HR		
Crop Code								5-26-16	6-2-16	6-5-16	6-12-16	6-16-16		
Rating Date								Control	Control	Control	Control	Control		
Rating Type								Percent	Percent	Percent	Percent	Percent		
Rating Unit								7 DAE	14 DAE	7 DA-C	14 DA-C	28 DAE		
Rating Timing														
Trt-Eval Interval														
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Unit	Other Rate	Other Unit	Growth Stage	Appl Code					
1	NONTREATED									0	0	0	0	0
2	A16003	1.67	SL	0.0446 lb ai/a		3.42 fl oz/a		7DAP	A	98 a	91 a	60 bcd	60 bc	60 bc
3	A16003	1.67	SL	0.089 lb ai/a		6.84 fl oz/a		7DAP	A	99 a	95 a	53 cd	50 c	50 c
4	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a		25 fl oz/a 3.52 fl oz/a		7DAP 7DAP	A A	99 a	99 a	95 a	95 a	95 a
5	A16003	1.67	SL	0.0446 lb ai/a		3.42 fl oz/a		0DAE_1-2	B	99 a	94 a	37 d	20 d	20 d
6	A16003	1.67	SL	0.089 lb ai/a		6.84 fl oz/a		0DAE_1-2	B	99 a	98 a	80 ab	60 bc	60 bc
7	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a		25 fl oz/a 3.52 fl oz/a		0DAE_1-2 0DAE_1-2	B B	99 a	99 a	90 a	90 a	90 a
8	A16003 INDUCE	1.67 SL 100 SL		0.0446 lb ai/a 0.25 % v/v		3.42 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			63 bc	83 ab	83 ab
9	A16003 INDUCE	1.67 SL 100 SL		0.089 lb ai/a 0.25 % v/v		6.84 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C			80 ab	87 a	87 a
10	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a		25 fl oz/a 3.52 fl oz/a		14-21DAE 14-21DAE	C C			99 a	98 a	98 a
LSD P=.05								1.7	6.7	24.1	24.3	24.3		
Standard Deviation								0.9	3.7	13.9	14.0	14.0		
CV								0.95	3.81	19.11	19.62	19.62		
Replicate F								1.000	4.825	0.844	0.085	0.085		
Replicate Prob(F)								0.4019	0.0341	0.4484	0.9186	0.9186		
Treatment F								1.000	2.175	6.751	10.209	10.209		
Treatment Prob(F)								0.4651	0.1385	0.0006	0.0001	0.0001		

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Could not calculate LSD (% mean diff) for columns 5,21,25,26 because error mean square = 0.

Bicyclopyrone: Tolerance and Efficacy in Horseradish - Site 1 - High Weed Pressure.

Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
 Investigator: Karla L. Gage, Ph.D.

								AMAPA-HR	AMAPA-HR	
								6-26-16	7-10-16	
								Control	Control	
								Percent	Percent	
								28 DA-C	42 DA-C	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code		
1	NONTREATED								0	0
2	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		7DAP	A	63 cd	58 bcd
3	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		7DAP	A	50 de	48 cd
4	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		7DAP 7DAP	A A	95 ab	93 a
5	A16003	1.67	SL	0.0446 lb ai/a	3.42 fl oz/a		0DAE_1-2	B	30 e	27 d
6	A16003	1.67	SL	0.089 lb ai/a	6.84 fl oz/a		0DAE_1-2	B	70 bcd	70 abc
7	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		0DAE_1-2 0DAE_1-2	B B	90 abc	90 ab
8	A16003 INDUCE	1.67 SL 100 SL		0.0446 lb ai/a 0.25 % v/v	3.42 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C	77 a-d	73 abc
9	A16003 INDUCE	1.67 SL 100 SL		0.089 lb ai/a 0.25 % v/v	6.84 fl oz/a 0.25 % v/v		14-21DAE 14-21DAE	C C	87 abc	87 ab
10	AUTHORITY ELITE SPARTAN 4F	7 SC 4 SC		1.37 lb ai/a 0.11 lb ai/a	25 fl oz/a 3.52 fl oz/a		14-21DAE 14-21DAE	C C	98 a	98 a
LSD P=.05								27.6	32.0	
Standard Deviation								16.0	18.5	
CV								21.79	25.86	
Replicate F								0.320	0.242	
Replicate Prob(F)								0.7307	0.7882	
Treatment F								6.000	4.878	
Treatment Prob(F)								0.0012	0.0035	

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Could not calculate LSD (% mean diff) for columns 5,21,25,26 because error mean square = 0.

Bicyclopyrone: Tolerance and Efficacy in Horseradish - Site 1 - High Weed Pressure.

Trial ID: 16-COL-SYN-HR-750 Location: Collinsville, IL Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Comments

1. Protocol: Syngenta (USNG0H750) High Weed Pressure.
2. Ratings:
 - CI as overall, rate A+B at 7, 14, and 28 DAE; rate A+B+C at 7, 14, 28, and 42 DA-C.
 - Describe injury symptoms in comments.
 - Stunt at 42 DA-C, rate all plots, height compared to largest plants, need not be in nontreated plants.
 - Record date of emergence, overall unless differences.
 - WC, rate A+B at 7, 14, and 28 DAE; rate A+B+C at 7, 14, 28, and 42 DA-C.
 - Rate before spray C (14-21DAE) get the 14 DAE rating.
3. No yield, do not sell crop.
4. Complete soil test.
5. Blanket PRE (start clean) and POST if needed not within 7 days of C, was not needed.
6. Application A is 7 days after planting.
 - Application B is just prior to emergence but 1-2 inch weeds.
 - Application C is 14-21 days after emergence, but can be 10-14 DAE if Palmer gets too big.
 - Application C is POST-directed to row centers, different mix size and different boom, make 2 passes with a 3 ft shielded sprayer using EVS (even) nozzles.
8. Report by August 1, 2016.
9. Horseradish emergence on 5-10-16 (at application B) was 20%, emerged plants were one inch or less and 1-2 leaves. There was no differences in emergence between plots.
 - Horseradish emergence was complete on 5-19-16 with no differences between plots.
10. AMAPA-HR = Herbicide-resistant Palmer amaranth (glyphosate).
11. Crop injury at 7 and 14 DAE was chlorosis, as the percentage of the horseradish plant that was injured.
 - Crop injury at 7 and 14 DA-C was chlorosis, except for treatment 10 which was necrosis.
 - Crop injury at 28 DA-C was stunting, no visible chlorosis.
 - By 42 DA-C there was no longer any visible chlorosis nor stunting.
12. Weed control ratings for treatments 8, 9, and 10 (post-directed) are control between the rows.
 - There was no control of the weeds within the row.
13. Rainfall following the 7DAP (A) application was 1.17 inch over 2 days beginning 13 hours later.
 - Rainfall following the 0DAE_1-2 (B) application was 2.38 inch over 7 days beginning 28 hours later.
 - Rainfall following the 14-21DAE (C) application was 0.73 inch over 5 days beginning 2 days later.
14. Crop injury and weed control ratings on 6-12-16 (14 DA-C) are the same as on 6-16-16 (28 DAE).